



Saskatchewan
Agriculture, Food
and Rural
Revitalization

CROP DEVELOPMENT BRANCH

2002 SPECIAL CROPS PROCESSORS SURVEY

FINAL REPORT

Survey Conducted by

SAMPLE SURVEY UNIT

POLICY BRANCH

EXECUTIVE SUMMARY

Survey results suggest that there is a moderate state of flux within the sector. With six percent more facilities identified since the 1999 survey, proliferation of processors has occurred during a period when a large number of firms have exited and simultaneously with substantial increases in the scale of production. Demand for primary processing activities, especially cleaning, appears to have reached a plateau, while secondary activities such as milling, retail packaging, sorting, and splitting have shown large increases in output. Since this trend may be attributable to increased development of markets for pulse food products, future opportunities, both by type of processing and scale, may be driven by expansion of domestic and export markets.

Permanent, non-seasonal employment patterns established over the past decade have intensified since 1999. Sector job creation is up substantially, increasing its contribution to economic activity in rural Saskatchewan.

NUMBER OF PROCESSORS

- There are an estimated 136 special crops processors in Saskatchewan, a 6% increase in number since 1999.

FULL-TIME EMPLOYMENT EQUIVALENTS

- There are an estimated 1,059 full-time equivalents of annual employment, an increase of 25% since 1999.
- The average number of full-time equivalents is 7.8 per processor, up 16% since 1999.
- Total annual payroll for the sector is estimated at \$31 million, up 48% (unadjusted \$) since 1999.

NUMBER OF EMPLOYEES

- There are an estimated 1,259 sector employees (full-/part-time, seasonal/non-seasonal), up 19% from 1999.
- The average number of employees per processor is 9.3, up 8% from 1999.
- Employment concentration in the year-round, full-time category increased to 73% from 64% in 1999.
- The proportion of processors with no year-round, full-time employees increased to 13% from 10% in 1999.
- A small proportion (8%) of processors has no employees at all, up substantially from the 2% in 1999.
- Half (49%) of all processors plan to expand within three years and 28% plan to expand within one year.

CROPS PROCESSED

- The special crops most commonly processed are pea (80% of processors) and lentil (67% of processors).
- Chickpea (49% of processors) are now third and canaryseed (36% of processors) fourth most common.
- The percentage of firms processing a particular crop has increased since 1999 for four of the eighteen crops surveyed (forage seed +23%, chickpea +22%, safflower +12%, mustard +1%) but decreased for the others.

VALUE-ADDED ACTIVITIES

- The total volume of all processing activities is estimated at 5.7 million tonnes, up 60% since 1999.
- Cleaning, bulk loading, and bagging make up most of the processing (97%), down less than 1% from 1999.
- While they are small relative to primary processes, four secondary processes showed large volume increases: milling (5162%); retail packaging (1,167%); colour sorting (137%); and splitting (65%).
- The average cleaning plant capacity is 9.9 tonnes per hour, a 48% increase since 1999. The median capacity is 5.6 tonnes per hour. The majority (52% of processors) has a capacity in excess of five tonnes per hour.
- More than a third of processors (36%) purchase special crops, down from 47% in 1999.
- More than a third of processors (37%) export special crops, down from 48% in 1999.

TABLE OF CONTENTS

Executive Summary.....	i
1. Background.....	1
2. Purpose.....	1
3. Methodology.....	2
4. Survey Topics.....	2
5. Survey Results.....	3
5.1 Section A: Survey Population	3
5.2 Section B: Crops Processed.....	4
5.2.1 Most Commonly Processed Crops.....	4
5.2.2 Changes Since 1995.....	4
5.3 Section C: Economic Impact.....	5
5.3.1 Employee Full-time Equivalents	5
5.3.2 Number of Employees	6
5.3.3 Expansion Plans.....	8
5.4 Section D: Value-added Activities	8
5.4.1 Major Processing Activities.....	8
5.4.2 Secondary Processing Activities.....	8
5.4.3 Cleaning Rate.....	9
5.4.4 Marketing of Special Crops	10
5.5 Section E: Transportation.....	10
5.5.1 Shipping Methods.....	10
5.5.2 Rail Line Access	10
5.5.3 Road Access.....	11
5.5 Geographical Distribution.....	11

TABLES AND CHARTS

FIGURE 1: Disposition of Survey Population.....	3
FIGURE 2: Distribution of Processors by Crops Processed and Comparison to Prior Surveys.....	4
FIGURE 3: Comparison of Crops Processed – 1995 to 2002.....	5
FIGURE 4: Distribution of Processors by Employee Full-time Equivalents.....	6
FIGURE 5: Distribution of Total Number of Employees and Average per Processor	6
FIGURE 6: Distribution of Processors by Number of Employees	7
FIGURE 7: Processor Expansion Plans	7
FIGURE 8: Value-added Activities and Volumes (tonnes).....	8
FIGURE 9: Lentil Exports (1989-99).....	9
FIGURE 10: Processors' Cleaning Capacity	10
FIGURE 11: Current Shipping Modes and Future Shipping Intentions	10
FIGURE 12: Proximity of Facility to Rail Line and Rail Company Involved	11
FIGURE 13: Road Access of Facilities and Average Distance from Primary Highway	11
FIGURE 14: Geographical Distribution of Special Crops Processors.....	12

1. BACKGROUND

In the past two decades, the increase in production of special crops in Saskatchewan has been dramatic. Saskatchewan farmers have searched for higher value crops to enhance their business margins, for new crops to capture marketing opportunities, and for diversification of their crop base to stabilize returns and facilitate complex crop rotations.

Saskatchewan farmers have been highly successful in diversifying their crop production. Recent reports from Sask. Agriculture, Food & Rural Revitalization (SAFRR) indicate that:

- Production of specialty crops reached a record 3.7 million tonnes in 2000, up from less than 0.3 million tonnes in 1982.
- The area seeded to specialty crops in 2001 was a record 2.6 million hectares, up from about 160,000 hectares in 1982.
- Two pulse crops – lentil and pea – accounted for only about 40,000 hectares in 1982 compared to 1.8 million hectares in 2001.
- The number of miscellaneous crop producers in the province increased from fewer than 4,000 in 1982 to nearly 20,000 in 2001.

Primary processing has developed in parallel with the increase in production of special crops. More recently, the increased value created by such processing has been the focus of domestic agricultural policy and of business development strategies for firms that are servicing the processing and marketing needs of special crops growers. In responding to these needs, the special crops processing sector has emerged as a substantial component of value-added economic activity in rural Saskatchewan, with a proven job creation capacity.

As a result, information related to services provided by processors, and to the impact of their business on the economy of rural Saskatchewan, is of vital importance to all stakeholders in the special crops sector. By informing policy decisions, particularly research funding, and also business decisions, such knowledge will enhance opportunities to advance sector diversification and growth. Gathering this data and distributing the information has been undertaken by the Crop Development Branch of SAFRR, which conducted prior surveys of processors in 1995 and 1999.

2. PURPOSE

The purposes of the 2002 survey of special crops processors are three-fold:

1. To provide policy makers with a profile of the sector and an assessment of its needs, and to measure its economic impact on rural Saskatchewan.
2. To provide the industry with information about the scope and characteristics of special crops processing in the province.
3. To provide primary producers with information about the services offered by processors and where to access them.

3. METHODOLOGY

All known potential special crops processors were surveyed. Crop Development Branch supplemented its existing list of processors by surveying SAFRR Extension Agrologists for recently established enterprises. Since the survey amounts to a census of special crops processors, the results should be considered representative of the sector.

A mail-back survey was used, combined with telephone follow-up to increase the response rate and identify the current business status of the survey population. Data entry, reduction and analysis were conducted using SPSS and Excel computer software.

4. SURVEY TOPICS

Section A identifies the names, mailing addresses, telephone numbers, and electronic addresses of processing firms. This information is essential to facilitate Crop Development Branch's communication with processors and to compile a processor contact list that can be distributed to Saskatchewan producers on request.

Section B provides a profile of the special crops that are being processed by each firm, information vital to both the Branch's database and the processor contact list. Processors were asked if they processed the following crops:

- | | | |
|-----------------|-------------|------------------|
| • Lentil | • Dry Beans | • Sunflower |
| • Pea | • Coriander | • Safflower |
| • Chickpea | • Caraway | • Triticale |
| • Marrowfat Pea | • Dill | • Forage Seed |
| • Canaryseed | • Borage | • Organic Grains |
| • Mustard | • Buckwheat | • Quinoa |

Section C deals with employment and expansion plans. Processors reported the number of employees they have in four categories: 1) year-round, full-time; 2) year-round, part-time; 3) seasonal, full-time; and 4) seasonal, part-time. They also indicated if they planned to expand within 1 year, expand within 3 years, or that they had no expansion plans.

Section D investigates processors' value-added activities. They reported the volumes of special crops they process in the following categories:

- | | | |
|----------------|--------------------|-------------------|
| • Cleaning | • Retail Packaging | • Milling |
| • Bagging | • Colour Sorting | • Feed Processing |
| • Bulk Loading | • Splitting | • Other |

Processors also indicated the capacity (tonnes per hour) of their seed cleaning plants and reported whether they purchase special crops and whether they export special crops.

Section E provides information about processors' transportation needs, including shipping methods used, proximity of facility to rail lines, and type of road access.

5. SURVEY RESULTS

5.1 SECTION A: Survey Population

A total of 183 processors were identified in the survey population as potential processors of special crops. Of these, a total of 136 can be considered current special crops processors, which represents a 6% increase in the number of active processors since 1999, following a 10% decline from 1995 to 1999. Figure 1 shows the disposition of the survey population.

FIGURE 1: Disposition of Survey Population

Status	2002 Survey		1999 Survey	
	Number	Percent	Number	Percent
Processing special crops	132	72.1	118	71.1
Not processing special crops	31	16.9	29	17.5
Not in business	16	8.7	6	3.6
Could not contact	0	0.0	3	1.8
Business getting started	0	0.0	2	1.2
Refusal	4	2.2	8	4.8
Total	183	99.9	166	100.0

It is somewhat surprising that the number of processors has increased when the trend line established by the 1999 survey was one of consolidation within the sector. Moreover, recent drought conditions have resulted in a substantial decline in special crop production in 2001 and 2002, which reduced demand for processing services in drought areas and added pressure to the business viability of some firms.

Part of the increased population size for processors is due to recent entrepreneurial efforts to develop marketing opportunities, which has resulted in the construction of new plants despite consolidation and drought-induced stress on the sector. These efforts are focused on shortening the food chain through partnerships between processors and end-users on the marketing end, and vertical integration of growers and processors at the production end of the chain.

It should be noted that several survey participants commented that primary capacity had peaked and that the sector's real needs lie in the area of market development. This may signal a transition in the market forces at work. While increasing output at the production end of the food chain stimulated past sector expansion, it may now be market development for secondary processing (food) and vertical integration strategies that drive sector expansion and diversification. While tentative, this conclusion is consistent with survey results that show large increases in annual volumes of secondary processing activities such as retail packaging, milling, and splitting, and that the sector may now have enough primary processing (cleaning) capacity to handle even record volumes of production (see Section 5.4.2).

One of the outcomes of recent consolidation within the grain handling system in Saskatchewan is the alternate use of grain elevating facilities that once bulk loaded grain for rail shipment to export position. Several of these elevators are now utilized as processing facilities, typically specializing in special crops and often in only one crop such as mustard or organic grain. This phenomenon has added several processing plants to the survey population, with some corporate entities now operating several facilities rather than the one or two that were surveyed in 1999. It should be noted, then, that the number of processors identified and analyzed in the survey is actually the number of processing facilities, not corporate entities. (Focusing on facilities, rather than firms, as the unit of analysis is necessary since each facility contributes directly to the sector profile and to key economic impacts such as job creation.)

5.2 SECTION B: Crops Processed

5.2.1 Most Commonly Processed Crops

- Crops most commonly processed are the major pulses – **pea** (80% of processors) and **lentil** (67%).
- The position of chickpea as the third most commonly processed special crop (49%) is a function of the importance of sizing chickpea seed for the human consumption market and a reflection of its growing popularity among producers as a high value crop.
- Canaryseed continues to be processed by a substantial proportion of processors (36%).

5.2.2 Changes Since 1995

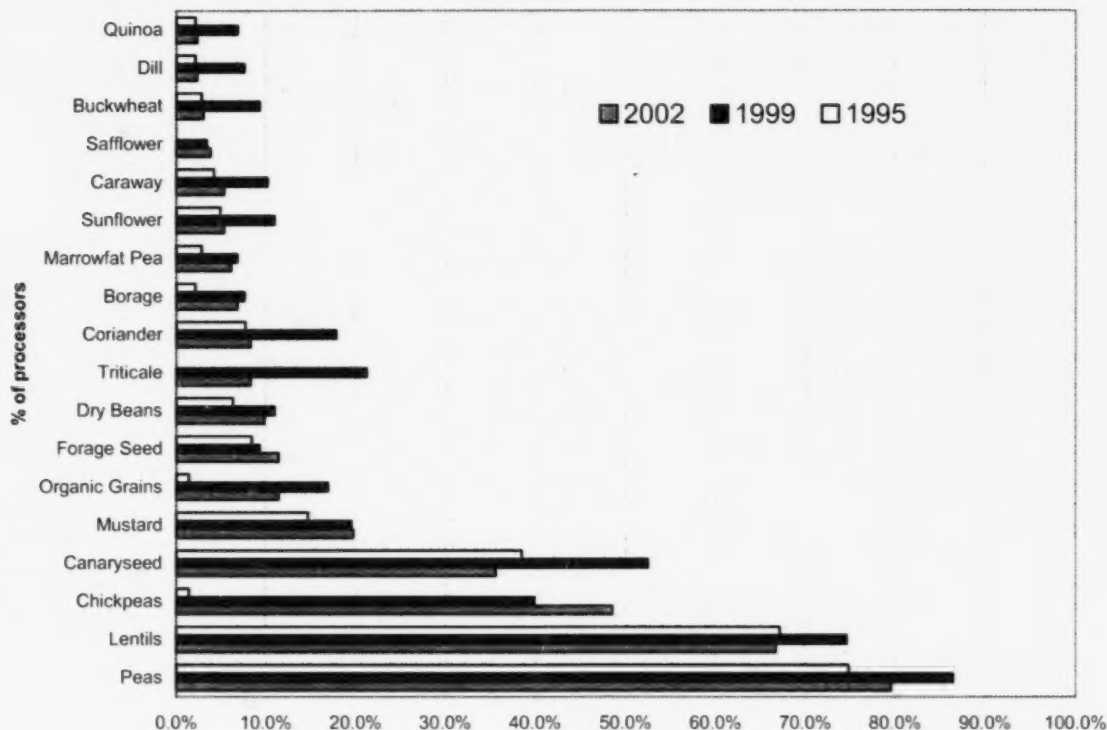
Figure 2 ranks special crops by the percentage of processors processing the crop and compares this prevalence to the historic sector pattern. Figure 3 highlights graphically the changes since 1995.

- The percentage of firms processing a particular special crop increased for **all** crops from 1995 to 1999, reflecting a general increase of 82% in special crop production from 1995 to 1999 and, considering the (10%) decline in the number of processors from 1995 to 1999, reveals that growth in the output of individual firms was occurring along with the diversification of crops processed.
- The pattern changed for the 1999 – 2002 period. The percentage processing increased for only four crops – forage seed (23%), chickpea (22%), safflower (12%), and mustard (1%).
- Among the four that increased, the significant changes are for forage seed and chickpea. Since 1995, forage seed has increased steadily in processing prevalence and chickpea has shown an astonishing rise in popularity as a processed crop.
- The most widely processed crops – pea and lentil – declined in prevalence since 1999, likely reflecting drought conditions, particularly in the highly productive west-central area of the province.

FIGURE 2: Distribution of Processors by Crops Processed and Comparison to Prior Surveys

	% of processors					Rank		
	2002	99-02 Change	1999	95-99 Change	1995	2002	1999	1995
Pea	79.5%	-8.0%	86.4%	15.5%	74.8%	1	1	1
Lentil	66.7%	-10.6%	74.6%	11.1%	67.1%	2	2	2
Chickpea	48.5%	21.9%	39.8%	2742.9%	1.4%	3	4	15
Canaryseed	35.6%	-32.2%	52.5%	36.5%	38.5%	4	3	3
Mustard	19.7%	1.0%	19.5%	32.7%	14.7%	5	6	4
Organic Grains	11.4%	-32.5%	16.9%	1108.4%	1.4%	6	12	5
Forage Seed	11.4%	22.6%	9.3%	10.7%	8.4%	7	8	16
Dry Beans	9.8%	-10.9%	11.0%	74.9%	6.3%	8	9	7
Triticale	8.3%	-60.8%	21.2%	-	0.0%	9	7	6
Coriander	8.3%	-53.4%	17.8%	131.2%	7.7%	10	5	17
Borage	6.8%	-10.5%	7.6%	261.9%	2.1%	11	14	12
Marrowfat Pea	6.1%	-10.3%	6.8%	142.9%	2.8%	12	16	11
Sunflower	5.3%	-51.8%	11.0%	124.5%	4.9%	13	10	8
Caraway	5.3%	-48.0%	10.2%	142.9%	4.2%	14	11	9
Safflower	3.8%	11.8%	3.4%	-	0.0%	15	18	18
Buckwheat	3.0%	-67.7%	9.3%	232.1%	2.8%	16	13	10
Dill	2.3%	-69.7%	7.6%	261.9%	2.1%	17	15	13
Quinoa	2.3%	-66.2%	6.8%	223.8%	2.1%	18	17	14

FIGURE 3: Comparison of Crops Processed – 1995 to 2002



5.3 SECTION C: Economic Impact

5.3.1 Employee Full-time Equivalents (FTEs)

The numbers of employees reported by processors were converted into weighted estimates of full-time equivalents (or person-years) of employment by weighting the employment period categories as follows:

Year-round, full-time	1.00 FTE	Seasonal, full-time	0.50 FTE
Year-round, part-time	0.50 FTE	Seasonal, part-time	0.25 FTE

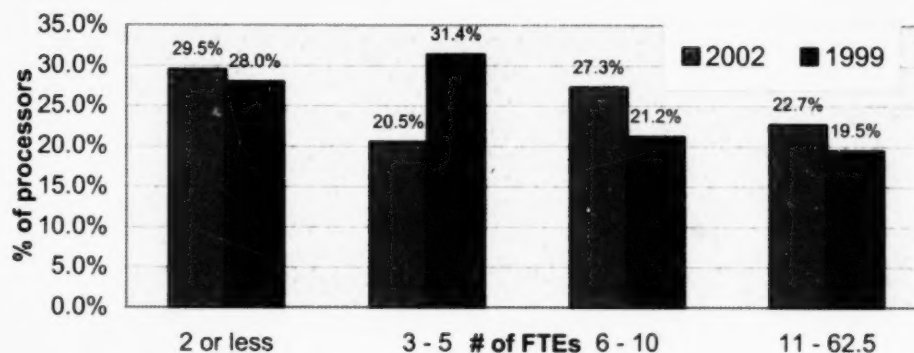
Using this method, the estimated total number of employment full-time equivalents in the sector is **1058.9¹**, an increase of 25% since 1999. The average number of FTEs per processor is **7.8**, up 16% since 1999. By applying an average wage rate of \$14.20 per hour², total annual payroll for the sector is estimated at **\$31.28 million**, up 48% (unadjusted \$) since the 1999 estimate of \$21.12 million.

¹ Refusals are included in economic estimates by imputing averages to these processors.

² Actual payroll amounts were not gathered from processors. Without detailed information about the distribution of job types (i.e. labourer, machine operator, manager, etc.) only a general estimate of the annual wages is possible. The base agricultural wage rate used in the 1999 survey was \$10.21 per hour (Sask. Ag & Food StatFacts #13.06, 1998.05.12). The October Sask. Farm Input Price Survey puts the 2002 average farm wage rate at \$12.06/hr., an 18.1% increase. Since 73% of employees are year-round, full-time, it is very likely that average wage rates for processors' employees would exceed the agricultural labour rate. Thus, the \$12 per hour used for calculations in the 1999 survey, becomes \$14.20 per hour for the current analysis. Also, if the processing sector pays higher rates than farm labour rates, then the annual payroll of the sector might exceed the estimated \$31 million. On the other hand, the method of converting numbers of employees to FTEs may have slightly over-estimated the number of FTEs.

Figure 4 shows a substantial shift of FTEs toward the processors with larger numbers of employees.

FIGURE 4: Distribution of Processors by Employee Full-time Equivalents



5.3.2 Number of Employees

The average number of employees per processor and the total number of employees in the sectors have risen steadily since 1995.

- The estimated total number of employees is **1,259**, up 16% since 1999 and up 23% since 1995.
- The average number of employees per processor is **9.3**, up 8% from 1999 and up 29% since 1995.

The overall employment pattern characterizes the sector as having well-established firms with on-going, non-seasonal marketing patterns.

- Employment is concentrated in the year-round, full-time category – 73% of all employees (Figure 5).
- Analysis showed a mirrored reflection of this concentration, where only one firm in eight (13%) was found to have **no** year-round, full-time employees.

FIGURE 5: Distribution of Total Number of Employees and Average per Processor

Employee category	% of all employees		Average # employees	
	2002	1999	2002	1999
Year-round, full-time	72.8%	63.5%	6.7	5.5
Year-round, part-time	7.1%	13.8%	0.7	1.2
Seasonal, full-time	10.8%	7.4%	1.0	0.6
Seasonal, part-time	9.2%	15.3%	0.9	1.3
Total	100.0%	100.0%	9.3	8.6

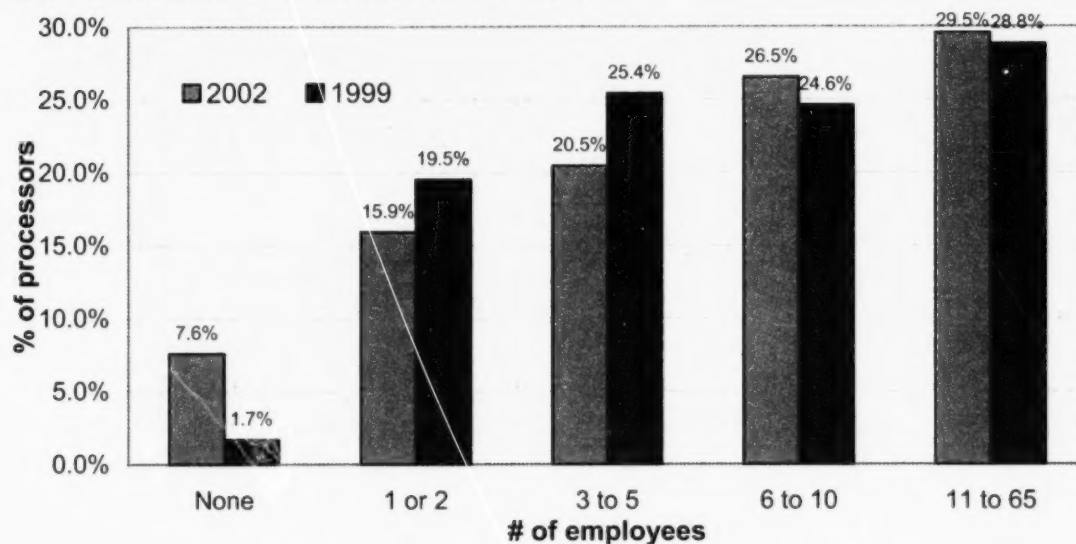
A change in employment pattern has occurred since 1999 (Figure 6). Employment concentration has shifted from the small firm categories (1 – 5 employees) into opposite ends of the distribution.

- The proportion of processors with no employees rose sharply since 1999, from 2% to 8%.
- The proportion in the medium-sized category (6 – 10 employees) increased to 27% from 25% in 1999.
- The group with the largest number of employees also increased (up to 30% from 29%) since 1999.

The shift toward a larger proportion of processors having more employees is likely a reflection of the substantial increase in operational scale reported in the survey, which is discussed in the Section D results below. Increased processing scale and sector output are having a direct effect on job creation in rural areas, resulting in a remarkable (48%, unadjusted \$) increase in the estimated sector payroll since 1999.

On the other hand, the sharp increase in the proportion of processors with no employees may be due to the impact of the decline in special crop production in 2001, down from 3.7 million to 2.7 million tonnes (SAFRR, 2001 *Specialty Crop Report*). Drought conditions, particularly in the west-central region of the province, contributed substantially to the decline in production. A reduction in demand for smaller firms likely precipitated business planning decisions to maintain processing activities but without hired labour.

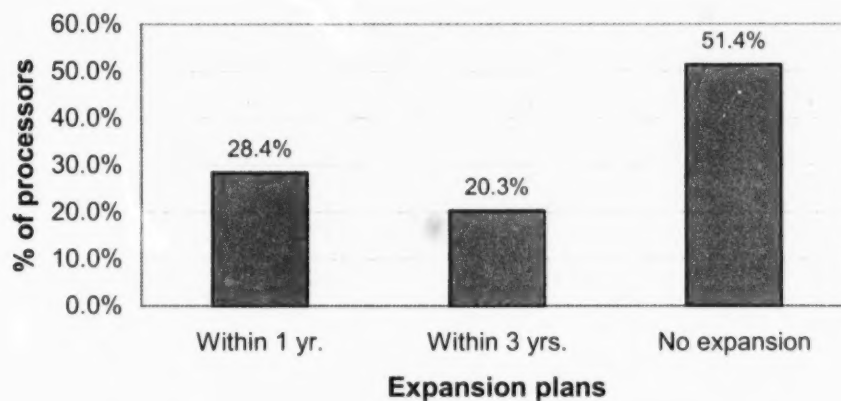
FIGURE 6: Distribution of Processors by Number of Employees



5.3.3 Expansion Plans

Figure 7 shows that nearly half (49%) of all processors plan to expand within three years and nearly three out of ten (28%) plan to expand within one year. These business intentions are virtually unchanged since 1999 and are quite bullish, especially in light of recent drought-related production problems. These plans are consistent with other survey results showing increased production scale and expansion of sector output.

FIGURE 7: Processor Expansion Plans



5.4 SECTION D: Value-added Activities

5.4.1 Major Processing Activities

The total annual volume of value-added processing is estimated at **5.7 million tonnes** (Figure 8), up 60% from 1999. Note that most of the cleaning volume is counted again among other categories, particularly bulk loading or bagging. The primary value-added activities in the sector continue to be cleaning, bulk loading, and bagging. These three processes account for nearly all types of special crops processing (97%).

- Nine out of ten processors (93%) clean special crops.
- Almost half (49%) of all processing is cleaning.
- Nearly three-quarters of processors (72%) bulk load special crops.
- Nearly a third (30%) of all processing is bulk loading.
- Three-quarters of processors (66%) bag special crops.
- Nearly one-fifth (18%) of all processing is bagging.

The average total volumes processed by each firm are substantial:

- The average annual cleaning volume is 21,895 tonnes per plant, up 48% from 1999.
- The average annual bulk loading volume is 15,256 tonnes, up 47% from 1999.
- The average annual bagging volume is 11,047 tonnes, up 42% from 1999.

5.4.2 Secondary Processing Activities

Specialization among processors continues to characterize the secondary processing activities (other than cleaning, bulk loading, and bagging). Relatively few facilities are involved within each of these categories and some results have not been reported to respect small sample sizes. Changes in secondary processing activities since 1999 are noteworthy (Figure 8, bold).

FIGURE 8: Value-added Activities and Volumes (tonnes)

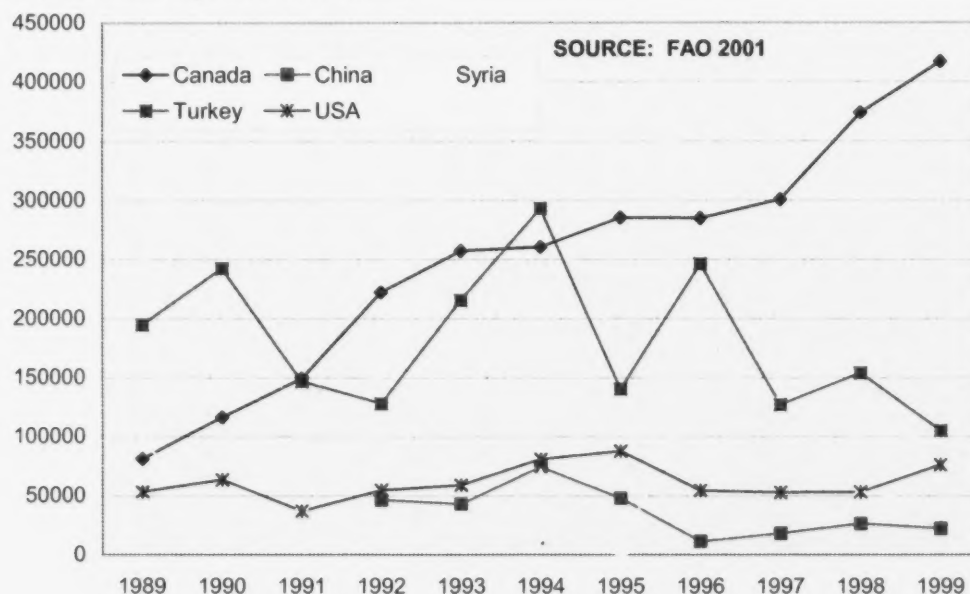
Value-added activity	% of processors		Total annual volume		
	2002	1999	2002	1999	Change
Cleaning	93.2%	90.7%	2,693,111	1,723,818	56.2%
Bulk Loading	81.1%	76.3%	1,632,413	1,010,526	61.5%
Bagging	69.7%	72.9%	1,016,354	725,102	40.2%
Colour Sorting	-	-	115,500	48,823	136.6%
Splitting	-	-	29,193	17,669	65.2%
Milling	-	-	17,100	325	5161.5%
Retail Packaging	-	-	5,865	463	1166.7%
Feed Processing	-	-	5,150	17,525	-70.6%
Other	-	-	3,717	8,100	-54.1%
Total (imputed):			5,685,000	3,550,000	60.1%

The amount of cleaning reported by processors in the 2002 survey is almost exactly the amount of the 2001 production (2.7 million tonnes). With added shift work and targeted expansion, sufficient cleaning capacity likely now exists within the sector to handle even the record production of 2000 (3.7 million tonnes). The large increase in production over the past two decades (+1,233%) has been a primary driver for sector growth. During this long period of development the construction of processing facilities to meet the increasing demand from primary producers has, in turn, stimulated more production of special crops since these facilities became a clearly identifiable, local market for increased special crops acres.

Production and processing have grown in synergistic fashion to what appears to be a plateau in the sector. Future opportunities for sector expansion and diversification may be a function of market development, both domestically and internationally, for food products. In fact, the large increases in secondary (food) processing activities such as milling, retail packaging, colour sorting, and splitting (Figure 8) suggest that this transition has already begun. It will be interesting to see if this transition is characterized by the vertical integration strategies discussed in Section 5.1 that are effectively shortening the food chain. The efficiencies created by the synergies inherent in such business structures would intensify the competitive forces within the sector and likely result in continued efficiency-driven sector rationalization.

One factor that could countervail this 'plateau' effect is continuing displacement of traditional special crops growers, particularly pulse crop producers. For example, Canada has grown dramatically (413%) over the past decade as a lentil exporting country (Figure 9), likely due to efficiency gains from on-going improvements in the technical base of production in the Canadian Prairies. Continuing global rationalization of such production in favour of technically advanced areas could stimulate further production and processing for export of primary-processed seed, a trend that could occur simultaneously with the growth in the output of secondary-processed products that is beginning to manifest itself.

FIGURE 9: Lentil Exports, 1989-99 (tonnes)

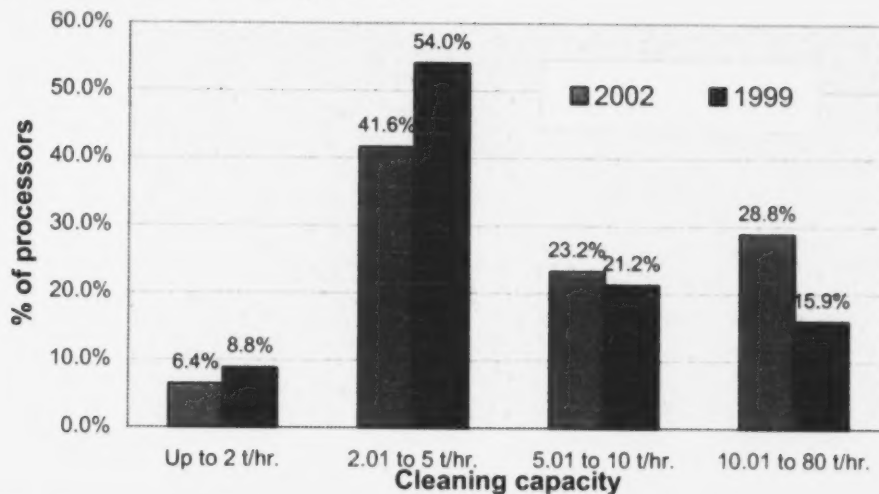


5.4.3 Cleaning Rate

The average cleaning rate of processors is **9.9 t/hr.**, up 48% since 1999 (Figure 10).

- This is reflected in the large increase since 1999 (from 16% to 29%) in the proportion of processors in the largest category of cleaning capacity (> 10 t/hr.)
- The proportion of medium sized plants (5 – 10 t/hr.) has also increased since 1999 (from 21% to 23%).
- Conversely, the proportion of smaller plants (< 5 t/hr.) has experienced a large decline, down from 63% in 1999 to 48% in 2002.
- Sector cleaning capacity is heavily weighted toward large-scale operations, as evidenced by the fact that the median cleaning rate of 5.6 t/hr. is substantially lower than the mean of 9.9 t/hr.

FIGURE 10: Processors' Cleaning Capacity



5.4.4 Marketing of Special Crops

- More than a third of processors (36%) purchase special crops (down from 47% in 1999).
- A similar proportion of processors (37%) exports special crops (down from 48% in 1999).

5.5 SECTION E: Transportation

5.5.1 Shipping Methods

Processors were asked to indicate what percentage of their exports is accounted for by each of a range of shipping modes and whether they intend to use each mode more or less in the future (Figure 11).

- 'Bulk hopper car' accounts for the largest proportion (28%) of export output, followed by 'bagged intermodal' (22%).
- While processors intend to use all modes more often in the future, the intended increase for 'bagged box car' is very small (+3%).
- The two shipping methods most likely to be used more are 'bulk container' (+32%) and 'bagged marine' (+27%).
- Notably, no processors said they would make less use in the future of either 'truck' or 'bulk box car'.

FIGURE 11: Current Shipping Modes and Future Shipping Intentions

	% of current shipping volume	Future Use		
		Use it more	Use it less	Difference
Bulk Hopper Car	28%	30%	5%	+25%
Bagged Intermodal	22%	21%	9%	+11%
Bagged Marine	21%	38%	11%	+27%
Bulk Container	13%	37%	5%	+32%
Bagged Box Car	11%	11%	9%	+3%
Truck	4%	25%	0%	+25%
Bulk Box Car	1%	16%	0%	+16%

5.5.2 Rail Line Access

Almost half (47%) of processors are located on a rail line (Figure 12). Among these, nearly half (47%) are on a primary line. The large majority (88%) of service is provided, nearly equally, by CN and CP rail companies. Short-line railways account for the remaining service (12%).

For those processors not on a rail line, the average distance from rail is 9.8 miles.

FIGURE 12: Proximity of Facility to Rail Line and Rail Company Involved

Rail proximity	% of all processors		Rail company	% of processors
Not on rail	53%	% among those with rail access	CN	45%
Primary	22%	47%	CP	43%
Secondary	7%	16%	Great Western	6%
Branch	12%	25%	Carleton Trail	4%
Short line	6%	12%	OmniTrax	2%
Total:	100%	100%	Total:	100%

5.5.3 Road Access

One-third (34%) of processors is located on a primary highway and about one-quarter (27%) is located on a secondary highway (Figure 13). The average distance from a primary highway is 12 miles, ranging in distance from 8 miles for those on grid roads to 16 miles for those on secondary highways.

FIGURE 13: Road Access of Facilities and Average Distance from Primary Highway

Highway access	% of processors	Average # miles
Primary highway	34%	from primary highway
Secondary highway	27%	16.4
Grid road	28%	8.1
Farm access road	10%	10.8
	Overall average:	11.9

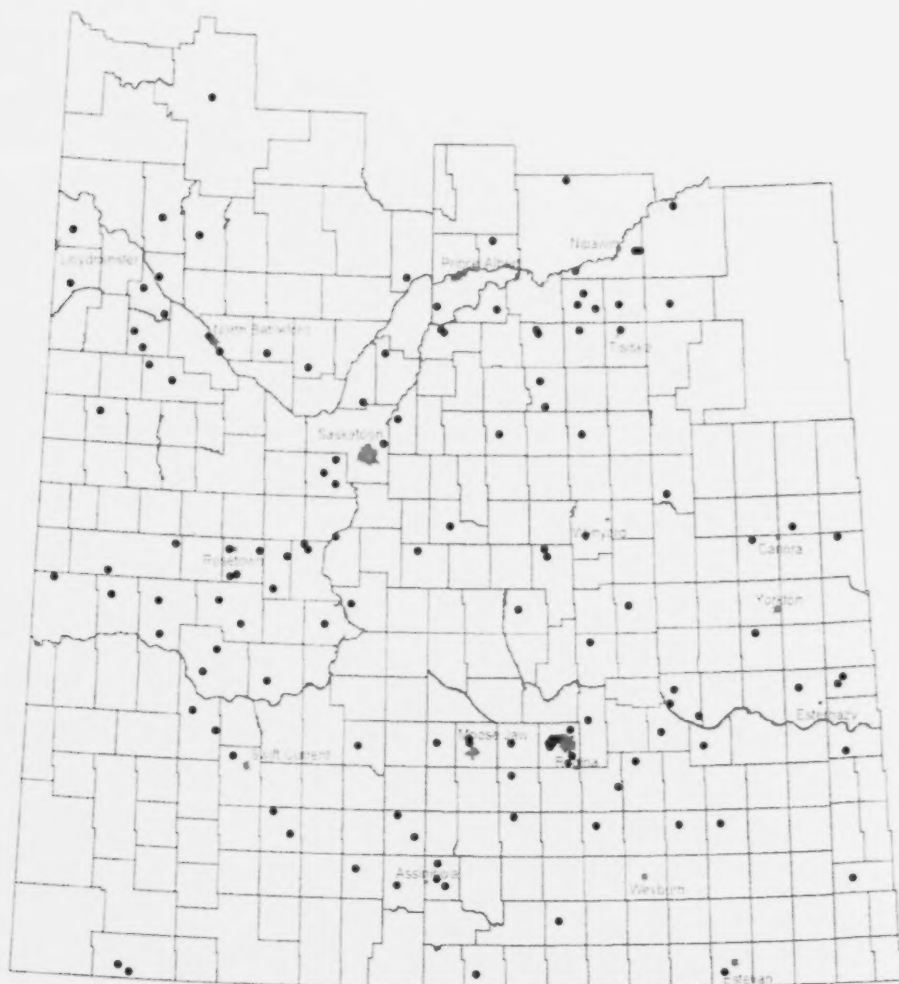
5.6 Geographical Distribution of Special Crops Processors

While special crops processors are distributed throughout much of the province, there are fewer in the southern part, especially in the livestock-producing region in the southwest. This pattern has changed somewhat since 1999 as several more processors are to be found in the southwest region, reflecting more special crop interest among growers in these areas. (It may be that, in addition to the benefits of crop diversification, the greater burden of rail line rationalization on the southwest is stimulating this interest.)

To some extent processors tend to be located along river systems, particularly the North and South Saskatchewan Rivers, a phenomenon that may be related to the location of suitable production conditions or major trading centers.

Figure 14 shows the geographical distribution of special crops processors. Note that the position of each processor is not exact. It shows only that the location is within the rural municipality.

FIGURE 14: Geographical Distribution of Special Crops Processors



Prepared by: Geomatics Unit, Policy Branch, Saskatchewan Agriculture, Food and Rural Revitalization
 Source: Sample Survey Unit, Policy Branch, Saskatchewan Agriculture, Food and Rural Revitalization
 Date: October 1, 2002

